



25G Surface Mount DFB Laser

Description

A 25 Gb/s edge emitting laser diode chip surface mount package. The Multi-quantum well distributed feedback (DFB) laser is directly modulated (DML) with a RF signal. This design offers a direct drop in for a RF connector to transmit data over a fiber optic cable. This device is used as the front end for an RF over Fiber (RFoF) system. 1310 and 1550 nm devices are available. This device is designed for use in uncooled applications. Built in Bias-T. Various fiber optic cable choices available.

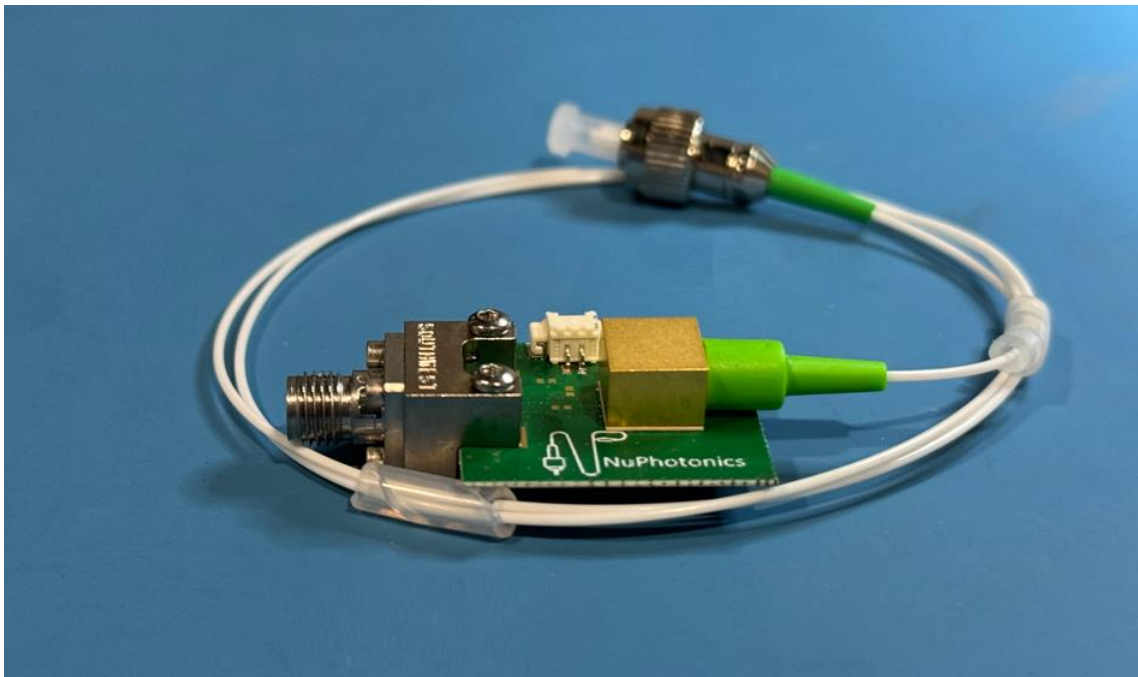
Features

- 8x8x7.5 mm surface mount package
- Single mode Pigtail cable
- G657A1 Fiber
- 1310 & 1550 nm
- High output power
- High SFDR
- Bandwidth TBD
- Built in Bias-T



Applications

- 5G
- Datacenters
- RF over Fiber (RFoF)



Device shown on an Evaluation Board



Electro-Optical Characteristics ($T_{op} 23 \pm 3^{\circ}C$, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Peak Wavelength	λ	1304.5 1545	1310 1550	1317.5 1557	nm	
Threshold Current	I_{th}		6	8	mA	$T=25\text{ C}$
Front Power	P_o	6	9		mW	$I_f = I_{th} + 20\text{ mA}$
Slope Efficiency	η	0.2	0.3		W/A	$I_f = I_{th} + 20\text{ mA}$
Series Resistance	R			10	Ohms	$P_o = 8\text{ mW}$
Forward Voltage	V_f		1.1	1.5	V	$I_f = I_{th} + 20\text{ mA}$
Spectral Wavelength Width (RMS)	$\Delta\lambda$		0.3	0.5	Nm	$P_o = 5\text{ mW at } -20\text{ dB}$

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min.	Max.	Unit
Voltage	V			1.8	V
Forward Current	I_f			80	mA
Storage Temperature	T_{stg}		-25	90	$^{\circ}C$
Storage Humidity	H_{stg}			85	% r.H.
Operating Temperature	T_{op}		15	35	$^{\circ}C$
Soldering Temperature	T_{st}	60 sec		200	$^{\circ}C$
ESD Susceptibility		HBM	100		V

Operating at maximum ratings for a prolonged period will cause damage to the device.



Pin Configuration

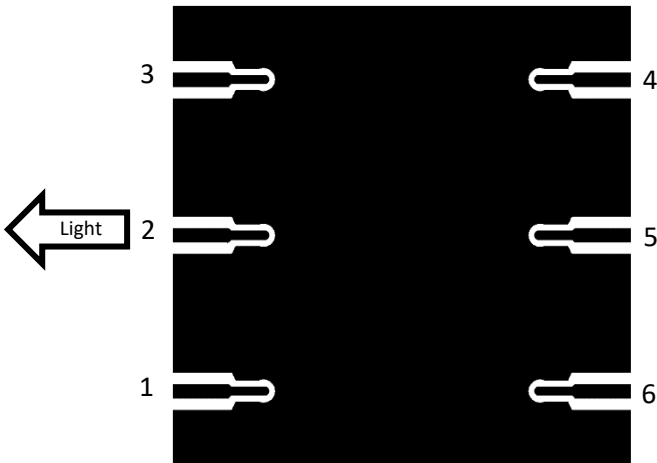


Fig 1. A: Bottom View

Note: Entire bottom is DC & RF ground.

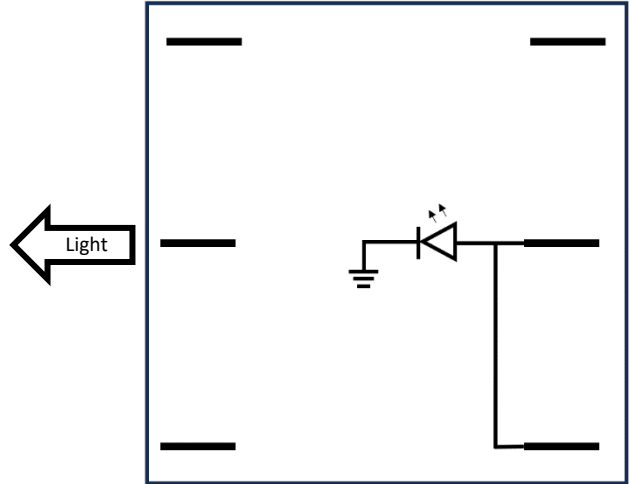


Fig 1.: Functional diagram (top-down view)

Pin Number	Function	DC Connector Color (Eval board)
5	RF Input	
6	Laser Bias	
1,2,3,4	N.C.	

Table 1: Device Pin out and corresponding color code for 8 pin DC connector.

Note: No connects can be connected to ground

Recommended Foot PCB Footprint

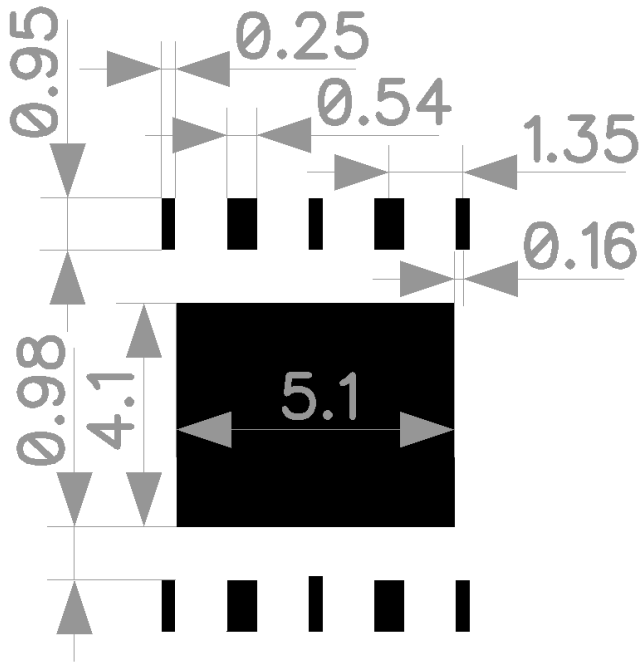


Fig 2. A: Recommended pad landing. All units in (mm)

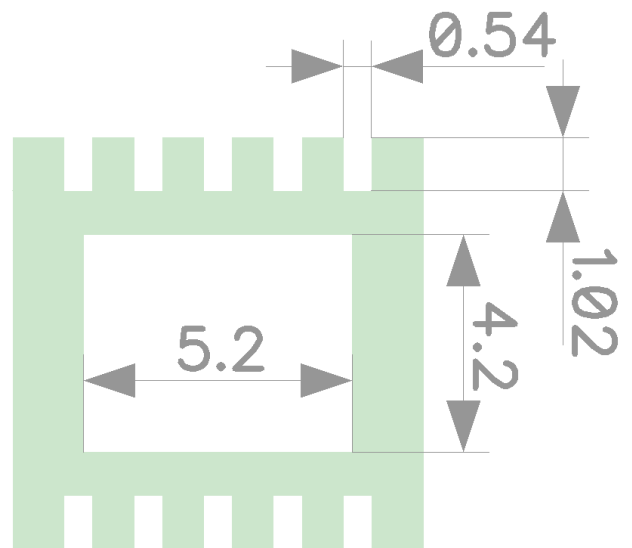
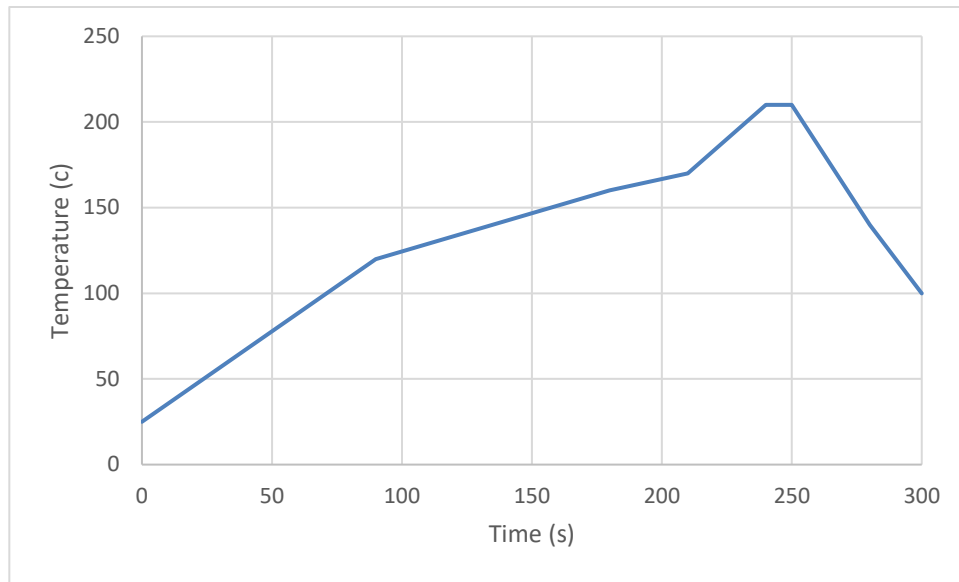


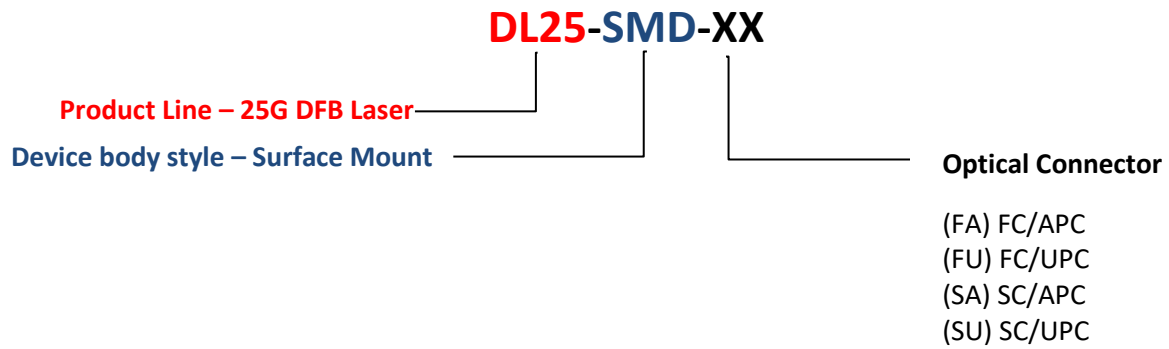
Fig 2. B: Recommended solder mask. All units in (mm)



Recommended Reflow Profile



Device Nomenclature



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